

REMARKS

This Amendment is being filed in response to the Office Action mailed October 20, 2011, which has been reviewed and carefully considered. Reconsideration and allowance of the present application in view of the amendments made above and the remarks to follow are respectfully requested.

Claims 1-20 are pending in the Application, where claims 1 and 7 are independent.

In the Office Action, claims 1-19 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,232,613 (Silfvast) in view of U.S. Patent No. 6,842,221 (Shiraishi). This rejection is respectfully traversed. It is respectfully submitted that the claims are patentable over Silfvast for at least the following reasons.

Silfvast is directed to an "angular pumped and emitting capillary (APEC) discharge light source having a blocking electrode." (Abstract, lines 1-2) "The blocking electrode prevents debris generated within the capillary from being expelled onto collecting optics," shown in FIG 1 as reference numeral 50, that collect radiation E, E1, E2 emitted from the Silfvast source. (Silfvast, Abstract, lines 6-8; see also column 4, lines 52-60) That is, a debris trap, such as a blocking electrode 130 shown in FIG 2 or metal electrode 310 shown in FIG 4B, "provides a direct blocking path for any debris." (Silfvast, column 5, lines 52-53) As shown in FIGs 4A-4B, "[g]as G is flowed into the discharge region through the axial bore hole 315 in the metal electrode 310 located at the end of the capillary from which the useful

radiation is emitted. Gas is admitted to this electrode by a gas inlet 311." (Silfvast, column 6, lines 37-41) In Silfvast, the same gas flows through the Silfvast source, which may be "Xenon helium, neon, argon, and krypton." (Silfvast, column 6, line 32) That is, as correctly noted on page 3, first full paragraph, Silfvast does not disclose or suggest using two different gases. Shiraishi is cited in an attempt to remedy the deficiencies in Silfvast.

Shiraishi is directed to an exposure apparatus having a mask room where a mask is carried into a reserve room for temporarily storage before carrying into the mask room filled with specific gas that has a low impurity concentration. Column 15, lines 15-35 and FIGs 1-3 of Shiraishi are cited to show using different gases. FIG 3 shows a gas supply unit 70 connected to various supply and exhaust valves pairs, such as 10, 11 or 16, 17, shown in FIGs 1 and 3.

It is respectfully submitted that Silfvast, Shiraishi, and combination thereof, do not disclose or suggest the present invention as recited in independent claim 1, and similarly recited in independent claim 7 which, amongst other patentable elements, recites (illustrative emphasis provided):

guiding between the radiation source and the particle trap a first gas at a first side of a particle trap arranged across an opening in a wall of a chamber;

introducing a second gas into the chamber at a second side of the particle trap, wherein the first side is different from the second side and the object receives the short-wave radiation from the second side; and
adjusting a pressure of the second gas to be at least as high as a pressure of the first gas so that the second gas flows from the second side to the first side, wherein the second gas is different from the first gas and the second side does not include the first gas.

A particle trap arranged across an opening in a wall of a chamber, is nowhere disclosed or suggested in Silfvast, Shiraishi, and combination thereof. Further, assuming arguendo that the combination of Silfvast and Shiraishi discloses or suggests using different gases, there is still no disclosure or suggestion in Silfvast and Shiraishi, alone or in combination, of adjusting the pressure of the second gas so that the second gas flows from the second or object side of the particle trap to the first or radiation source side of the particle trap. Accordingly, it is respectfully requested that independent claims 1 and 7 be allowed. In addition, it is respectfully requested that claims 2-6 and 8-20 also be allowed at least based on their dependence from independent claims 1 and 7 as well as their individually patentable elements.

For example, a channel at the first or radiation source side of the trap, where the channel is transverse to the propagation direction of the radiation, and where both the first gas and the second gas flow for transporting the contaminant particles to one side of the channel, as recited in claims 3 and 20, are nowhere disclosed or suggested in Silfvast, Shiraishi, and combination thereof.

In addition, Applicants deny any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicants reserve the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived

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and none of the Examiner's statements are conceded.

In view of the above, it is respectfully submitted that the present application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

Respectfully submitted,

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